

REMARKS

I. Introduction

Claims 14-15 and 17-24 are pending in this application after cancellation of claim 16. Claims 14 and 23 have been amended.

Claims 14 to 24 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 14 to 19 and 22 to 24 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,140,906 to Kaihara et al. (hereafter “Kaihara”) in view of U.S. Patent No. 6,076,965 to Rosen et al. (hereafter “Rosen”). Claims 20 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaihara in view of Rosen and in further view of U.S. Patent No. 4,387,258 to Vadekar et al. (hereafter “Vadekar”).

II. The rejection of claims 14-24 under 35 U.S.C. 112, second paragraph, should be withdrawn

Claims 14 to 24 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. With respect to claim 14, the Office Action asserts that “[i]t is not clear what ‘currentless deposition’ encompasses,” and that “[t]he originally filed disclosure does not contain a definition of such term.” Applicants respectfully disagree and submit that this phrase is definite and clear as used, particularly when the rejected claims are read in view of the specification. In this regard, the present application provides, for example, that:

German Patent No. DE 196 36 493 describes the fabrication of a spark plug resistor using a currentless deposition of a metal onto glass or ceramic powder.

Specification, page 1, line 29 to page 2, line 1 (as amended by Preliminary Amendment).

Moreover, the present application further provides, for example, the following:

Palladium nuclei, which are used as seed crystals for the currentless deposition of the metals, which are to later form metal layer 26, are initially deposited by reduction on surface 24. The currentless deposition of metals according to this process is generally known

and will, therefore, not be more closely explained within the framework of this present description. Metals, such as cobalt, nickel, copper, or platinum, can be deposited.

Specification, page 4, lines 10 to 17. (Emphasis added). It would be readily apparent that currentless deposition of a metal refers to deposition which does not involve electrical currents. Accordingly, the indefiniteness rejection based on the term “currentless deposition” is improper and is plainly obviated by the foregoing text of the specification. In this regard, it is respectfully noted that “[i]n reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope,” and that “an analysis as to why the phrase(s) used in the claim is ‘vague and indefinite’ should be included in the Office action.” (M.P.E.P. § 2173.03).

The Office Action also asserts that “adjacent particles of the carrier” as provided for in the context of claim 23 lacks antecedent basis. In this regard, claim 23 has been amended to address this issue. No new matter has been added. It is respectfully submitted that the claims as presented are definite. It is therefore respectfully requested that the indefiniteness rejections be withdrawn.

III. The rejection based upon Kaihara and Rosen should be withdrawn

Claims 14 to 19 and 22 to 24 stand rejected under 35 U.S.C. § 103(a) as being obvious over Kaihara in view of Rosen. In response, Applicants respectfully submit that combination of Kaihara and Rosen does not render obvious pending claims 14, 15, 17 to 19 and 22 to 24 for at least the following reasons.

Amended claim 14 recites a method for manufacturing a temperature sensor, in which at least one conductor track is formed by a currentless deposition of a metal onto a surface of a carrier which is **a powder**, which is composed of a metal oxide, a metal nitride and/or a metal carbide, and by a subsequent thermal treatment, and **an evaluation device is connected to the at least one conductor track**, which is configured to measure and evaluate a temperature-dependent change in a resistance of the at least one conductor track.

Kaihara purportedly concerns a temperature sensor having a conductor track and an insulating body which are laminated together. The conductor track and the insulating body are layered and are produced by applying a “material paint” onto a carrier film or by screen print. (Kaihara, col. 15, lines 9 to 33). In this regard, it is respectfully submitted that

Kaihara does not describe, or even suggest, that the carrier exists as a powder, or that a metal is applied by currentless deposition onto the surface of a carrier that exists in the form of a powder. Accordingly, Kaihara does not disclose forming at least one conductor track by a currentless deposition of a metal onto a surface of a carrier which is **a powder**, which is composed of a metal oxide, a metal nitride and/or a metal carbide, and by a subsequent thermal treatment.

It is also respectfully submitted that Kaihara does not disclose **connecting an evaluation device to the at least one conductor track**, which is configured to measure and evaluate a temperature-dependent change in resistance of the at least one conductor track formed by a currentless deposition of a metal onto a surface of a carrier which is a powder, which is composed of at least one of a metal oxide, a metal nitride and/or a metal carbide, and by subsequent thermal treatment, as recited in claim 14. Indeed, the Office Action admits on page 3 that “Kaihara does not teach an evaluation device.”

Rosen purportedly concerns a sensor having a sensor element 102 in the form of a monocrystalline nickel-cobalt-manganese oxide spinel, a pair of electrical terminals 104 in ohmic contact with the sensor element 102, leads 106, and electrical resistance measuring device 110. (See Rosen, col. 7, lines 8 to 25; Figure 4). It is respectfully submitted that Rosen does not disclose forming at least one conductor track by a currentless deposition of a metal onto a surface of a carrier which is **a powder**, which is composed of at least one of a metal oxide, a metal nitride and/or a metal carbide, and by subsequent thermal treatment, as recited in claim 14. Indeed, the Office Action does not assert that Rosen discloses these limitations of claim 14.

It is also respectfully submitted that Rosen does not disclose **connecting an evaluation device to the at least one conductor track**, which is configured to measure and evaluate a temperature-dependent change in resistance of the at least one conductor track formed by a currentless deposition of a metal onto a surface of a carrier which is a powder, which is composed of at least one of a metal oxide, a metal nitride and/or a metal carbide, and by subsequent thermal treatment, as recited in claim 14. Although the Office Action asserts on pages 3 to 4 that “an electrical resistance measuring device 110 is connected to the sensing element (temperature sensor) via leads 106 (conductor tracks),” it is respectfully submitted that the electrical measuring device 110 of Rosen does not measure and evaluate a temperature-dependent change in resistance of the so-called conductor tracks (i.e., leads) 106. Instead, Rosen discloses “an electrical measuring device 110 adapted to measure the electrical resistance *through the sensing element* [102].” (Rosen, col. 7, lines 27 to 29) (emphasis

added). In this regard, Rosen further provides that “[t]he particular resistance-measuring device illustrated in FIGS. 4-5 is a Wheatstone bridge,” and that “[t]he resistance required to bring the bridge into balance is a measure of the resistance *through the sensing element.*” (Rosen, col. 7, lines 29 to 30 and lines 39 to 41) (emphasis added). Accordingly, the electrical resistance measuring device 110 is configured to measure and evaluate a temperature-dependent change in a monocrystalline nickel-cobalt-manganese oxide spinel, but **not a temperature-dependent change in at least one conductor track formed by a currentless deposition of a metal onto a surface of a carrier which is a powder, which is composed of at least one of a metal oxide, a metal nitride and a metal carbide, and by subsequent thermal treatment**, as recited in claim 14.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

As indicated above, the combination of Kaihara and Rosen fails to identically disclose all of the limitations of claim 14, in particular, forming at least one conductor track by a currentless deposition of a metal onto a surface of carrier which is a powder, which is composed of a metal oxide, a metal nitride and/or a metal carbide, and by a subsequent thermal treatment, and connecting an evaluation device to the at least one conductor track, which is configured to measure and evaluate a temperature-dependent change in resistance of the at least one conductor track. Accordingly, even if it were proper to combine the Kaihara and Rosen references as suggested (which is not conceded by Applicants), it is respectfully submitted that such combination does not render obvious claim 14, or any claims that depend from claim 14, including claims 15, 17 to 19 and 22 to 24.

It is also respectfully submitted that the Office Action's assertions that it would have been obvious to modify the temperature sensor of Kaihara “to include an evaluation device” and “to provide loading to a conductor track” are improperly based on hindsight reasoning. In

this regard, in rejecting a claim under 35 U.S.C. § 103, Applicant's invention “*must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.*” Interconnect Planning Corp v. Feil, 774 F.2d 1132, 1138, 227 U.S.P.Q. 543, 547 (Fed. Cir. 1985) (emphasis added). Indeed, the Office Action does not assert that it would have been obvious at the time the invention was made to make such a combination. Accordingly, combining these prior art references without evidence of a proper suggestion, teaching, or motivation “simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability — the essence of hindsight.” In re Dembiczak, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999).

Moreover, it is respectfully submitted that the cases of In re Fine, supra, and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify or combine the references do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Office Action reflects a subjective “obvious to try” standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of In re Fine stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

It is respectfully submitted that the present Office Action offers no evidence whatsoever for the suggestion to combine the prior art teachings, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding.

More recently, the Federal Circuit in the case of In re Kotzab made clear that even if a claim concerns a “technologically simple concept” -- which is not the case here --, there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed.” The Court indicated that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

Accordingly, Applicants respectfully submit that there is no evidence that the references relied upon, whether taken individually or in combination, would provide the features and benefits of claim 14. It is therefore respectfully submitted that claim 14 is allowable for these reasons.

As for claims 15, 17 to 19 and 22 to 24, which ultimately depend from claim 14 and therefore include all of its limitations, it is respectfully submitted that these claims are allowable for at least the same reasons that claim 14 is allowable.

In view of the foregoing, it is respectfully submitted that claims 14, 15, 17 to 19 and 22 to 24 are allowable. Withdrawal of the rejection of these claims is therefore respectfully requested.

IV. The rejection based upon Kaihara, Rosen, and Vadekar should be withdrawn

Claims 20 and 21 stand rejected under 35 U.S.C. § 103(b) as being unpatentable over Kaihara in view of Rosen and further in view of Vadekar.

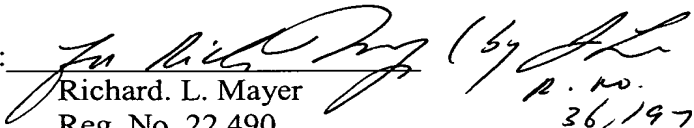
It is respectfully submitted that even if it were proper to combine the references as suggested (which is not conceded by Applicants), Vadekar does not cure the critical deficiencies of the combination of Kaihara and Rosen as applied against claim 14 (as explained above), from which claims 20 and 21 ultimately depend. Indeed, Vadekar is merely cited for the disclosure of selective hydrogenation using palladium on crystalline silica as a substrate with deposited palladium via vapor or gas deposition and reduction. (See Office Action, p. 4). Accordingly, for at least these reasons, Applicants respectfully submit that the combination of Kaihara, Rosen, and Vadekar does not render claim 14 or its dependent claims 20 and 21 unpatentable. Withdrawal of the rejection is therefore respectfully requested.

CONCLUSION

In view of the foregoing, Applicants assert that the present invention is new, non-obvious, and useful. Furthermore, all issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,
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